

- 57 -

CLAIMS:

1. (Amended) A nucleic acid detection method comprising:

a sample fixing step of fixing a cell-containing sample in divided compartments of a support;

a nucleic acid exposing step of exposing nucleic acids contained in the sample;

a nucleic acid amplifying step of performing PCR by placing a PCR mixture, containing primers for amplifying a target nucleic acid, into the compartments of the support; and

a determining step of determining whether amplified nucleic acids in a PCR solution contains the target nucleic acid.

2. (Cancelled)

3. (Amended) A nucleic acid detection method as set forth in claim 1, wherein the nucleic acid exposing step is performed by one or more methods selected from the group consisting of a detergent treatment method, an enzyme treatment method, and a heat treatment method.

4. (Cancelled)

5. (Amended) A nucleic acid detection method as set forth in claim 1, wherein the amplified nucleic acids are labeled in the nucleic acid amplifying step.

6. A nucleic acid detection method as set forth in claim 5, wherein, in the determining step, a target nucleic acid is detected if there is complementary hybridization of known gene fragments with probes, for which the nucleic acids amplified and labeled in the nucleic acid amplifying step are used.

7. A nucleic acid detection method as set forth in claim 6, wherein the known gene fragments are fixed on the support in advance.

8. A nucleic acid detection method as set forth in claim 5, wherein, in the determining step, a target nucleic acid is detected with use of a DNA microarray and probes, for which the nucleic acids amplified and labeled in the nucleic acid amplifying step are used.

9. A nucleic acid detection method as set forth in any one of claims 1 through 8, wherein the sample originates in biological sources.

10. A nucleic acid detection method as set forth in claim 9, wherein the biological sample originates in humans.

11. A gene detecting kit for detecting a target gene in a sample according to a nucleic acid detection method of any one of claims 1 through 10.

12. A gene detecting kit for detecting a disease-associated gene of humans according to a nucleic acid detection method of claim 10.

13. A gene detecting kit as set forth in claim 12, wherein the disease-associated gene of humans is a gene of infection-causing microbes that have infected humans.

14. A gene detecting kit as set forth in claim 13, wherein the gene of infection-causing microbes that have infected humans is a drug-resistant gene.

15. A gene detecting kit as set forth in claim 13, wherein the gene of infection-causing microbes that have infected humans is a drug-sensitive gene.

16. A gene detecting kit as set forth in claim 12,

wherein the disease-associated gene of humans is a marker gene for cancer.

17. A gene detecting kit as set forth in claim 12, wherein the disease-associated gene of humans is a genetic disease-associated gene.

18. A gene detecting kit as set forth in any one of claims 11 through 17, which comprises: a target gene amplifying primer; PCR reaction buffer; a mixture of deoxynucleoside triphosphate; labeled deoxynucleoside triphosphate; thermostable DNA polymerase; a sample-fixing support; and an indicator for detecting amplified nucleic acids.

19. (Added) A nucleic acid detection method as set forth in claim 1, wherein the support with the divided compartments is shaped to fit a gene amplifier for PCR (thermal cyclers).

20. (Added) A nucleic acid detection method as set forth in claim 1, wherein, in the determining step, the target nucleic acid is detected by electrophoresis.